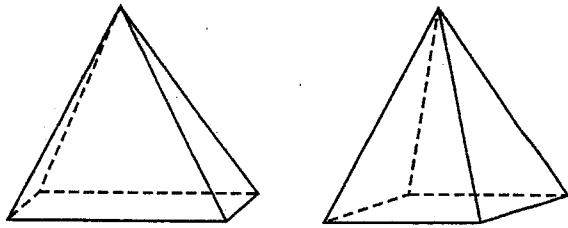


Name _____

Relating Solids and Plane Figures

PS 8-1

Two Pyramids Look at the drawings of a rectangular pyramid and a square pyramid. Then complete 1–3.



1. What is the least number of edges that must meet for there to be a vertex?

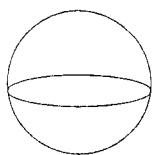
2. How many vertices are at the bases (or bottoms) of each pyramid?

3. How many faces does each pyramid have?

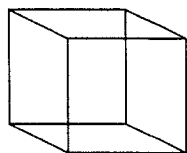
What Am I? For 4–6, tell which solid figure is being described.

4. I have 6 faces that are all flat. Two of my faces are square and the others are rectangular. I have 8 vertices and 12 edges. What am I? _____
5. I have a total of 2 flat surfaces. I have no edges or vertices. Please do not confuse me with my cousin the cone. What am I? _____
6. I have no edges, no vertices, and no faces. What am I? _____
7. **Writing in Math** What is the main difference between the two pyramids? Explain.

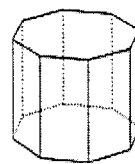
3-Dimensional Figures



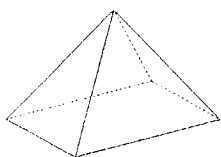
1



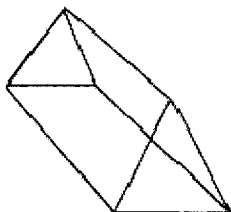
2



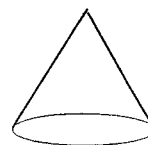
3



5



6



7

Riddle A:

- I have 6 faces.
- I have 12 edges.
- I have 8 vertices.

Riddle C:

- I have 5 faces.
- I am a prism.



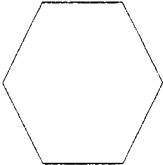
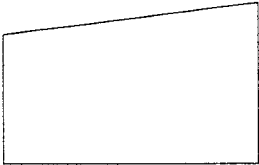
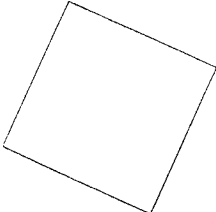
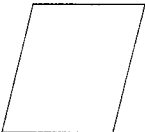
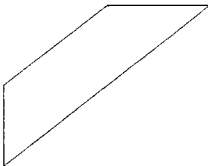
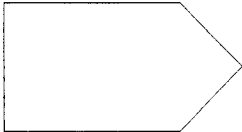
Riddle B:

- I have a curved surface.
- I have one base that is a circle.

Riddle D:

- I have 5 faces.
- I have 8 edges.
- I have 5 vertices.

2-Dimensional Figures

 <p>1</p>	 <p>2</p>	 <p>3</p>	 <p>4</p>
 <p>5</p>	 <p>6</p>	 <p>7</p>	 <p>8</p>

Riddle A:

- I have 4 vertices.
- I have only one set of parallel sides.
- I have 2 right angles.

Riddle D:

- I have 4 vertices.
- I have 4 right angles.
- I am a rhombus, square, and rectangle.

Riddle B:

- I have 6 vertices.

Riddle C:

- I am a pentagon.

Riddle E:

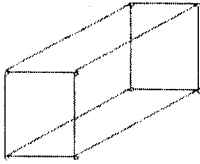
- I have 4 vertices.
- I have 2 sets of parallel sides.
- I have no right angles.

Name: _____

2- and 3-Dimensional Figures

Directions: Read each question. Circle the letter of the best answer.

1. How many faces does the figure below have?

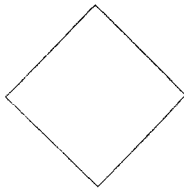


- A. 5
- B. 6
- C. 8
- D. 12

4. The length of a triangle's three sides are: 5 inches, 6 inches, and 5 inches. What kind of triangle is it?

- A. Equilateral
- B. Isosceles
- C. Scalene

2. Which correctly describes the quadrilateral?



- A. Square
- B. Rectangle
- C. Parallelogram
- D. All of the above

5. How many vertices does the figure below have?



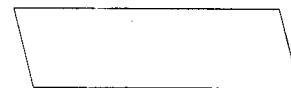
- A. 4
- B. 5
- C. 6
- D. 8

3. Which triangle is shown?



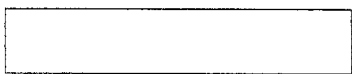
- A. Equilateral
- B. Isosceles
- C. Right
- D. Scalene

6. Which 2-dimensional object is shown?



- A. Rhombus
- B. Parallelogram
- C. Rectangle
- D. Trapezoid

7. Which choice shows **all** of the names of the figure?



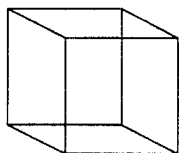
- A. Rectangle only
- B. Parallelogram only
- C. Rectangle and parallelogram
- D. Rectangle, parallelogram, and trapezoid

10. How many edges does the figure below have?



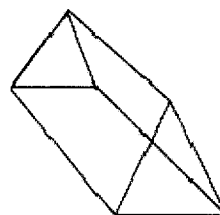
- A. 6
- B. 10
- C. 12
- D. 18

8. How many edges does the figure below have?



- A. 6
- B. 8
- C. 11
- D. 12

11. Which describes the figure below?



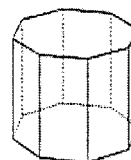
- A. Triangular prism
- B. Rectangular prism
- C. Triangular pyramid
- D. Rectangular pyramid

9. Which describes the figure below?



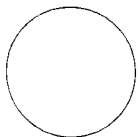


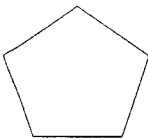
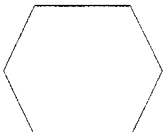
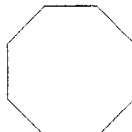
- A. Hexagonal prism
- B. Hexagonal pyramid
- C. Octagonal prism
- D. Octagonal pyramid

12. How many faces does the figure below have?



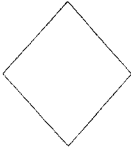

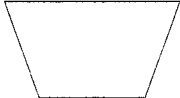


- A. 8
- B. 10
- C. 16
- D. 24

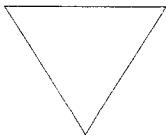

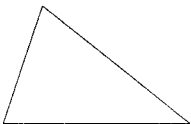
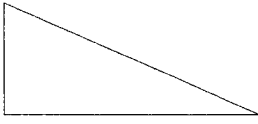
2-Dimensional Objects

Circle	Triangle	Quadrilateral	Pentagon	Hexagon	Octagon
					
	___ sides	___ sides	___ sides	___ sides	___ sides

Quadrilaterals

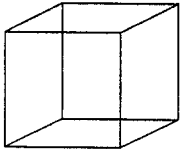
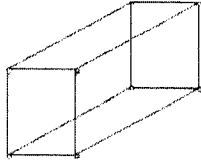
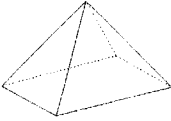


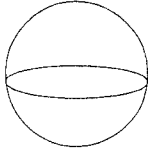
Parallelogram	Rectangle	Rhombus	Square	Trapezoid
				
___ pairs of parallel sides	___ pairs of parallel sides ___ right angles	___ pairs of parallel sides ___ equal sides	___ pairs of parallel sides ___ right angles ___ equal sides	___ pair of parallel sides

Triangles

Equilateral Triangle	Isosceles Triangle	Scalene Triangle	Right Triangle
			
___ congruent sides	___ congruent sides	___ congruent sides	___ right angle

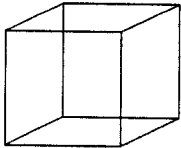
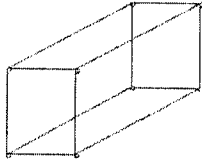
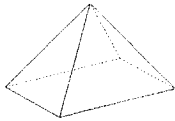
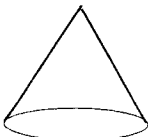

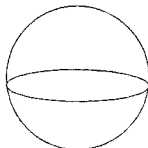
Name: _____

3-Dimensional Objects

Cube	Prism	Pyramid	Cone	Cylinder	Sphere
					
___ faces	___ faces	___ faces	___ bases	___ bases	___ faces
___ edges	___ edges	___ edges	___ edges	___ edges	___ edges
___ vertices	___ vertices	___ vertices	___ vertices	___ vertices	___ vertices

Name: _____

3-Dimensional Objects

Cube	Prism	Pyramid	Cone	Cylinder	Sphere
					
___ faces	___ faces	___ faces	___ bases	___ bases	___ faces
___ edges	___ edges	___ edges	___ edges	___ edges	___ edges
___ vertices	___ vertices	___ vertices	___ vertices	___ vertices	___ vertices

Name _____ Date _____

Answer the questions

1. What is this figure called?

- a. cone
- b. rectangular prism
- c. cylinder
- d. cube

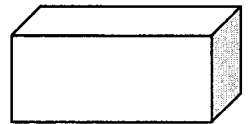


2. What shape are the faces on a cube?

- a. circle
- b. square
- c. hexagon
- d. pentagon

3. What is the total number of faces on this rectangular prism (solid)?

- a. 3
- b. 4
- c. 6
- d. 8



4. How many vertices does a cube have?

- a. 2
- b. 4
- c. 6
- d. 8

5. Which of these figures has no faces?

- a. cube
- b. sphere
- c. cone
- d. pyramid

6. Which of these items is a cylinder?

- a. basketball
- b. gift box
- c. can of beans
- d. ice cream cone

Name _____

Polygons

P 8-2

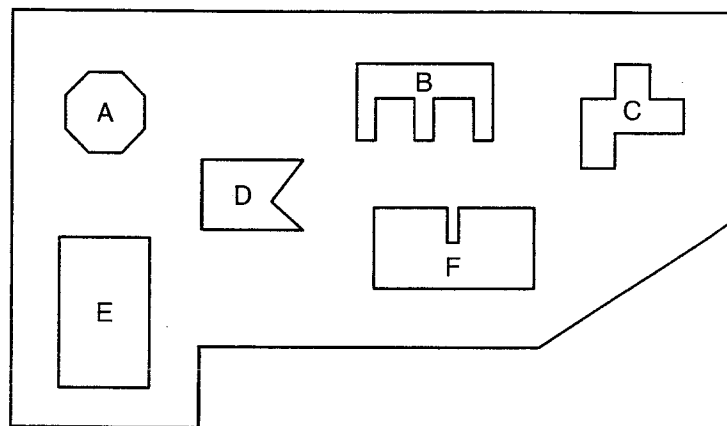
Draw an example of each polygon. How many sides and vertices does each one have?

1. Square

2. Octagon

3. Hexagon

The map shows the shapes of buildings in Polygon Park. Identify the polygons that are lettered.



4. A

5. D

6. C

7. B

8. E

9. F

Test Prep

10. Which is the point where sides meet in a polygon?

A. Edge

B. Endpoint

C. Side

D. Vertex

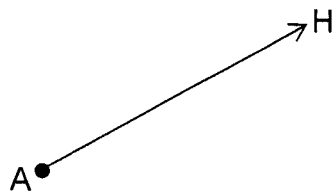
11. **Writing in Math** Describe two polygons by the number of vertices and sides each has.

Name: _____

Points, Line Segments, Rays, Lines, and Planes

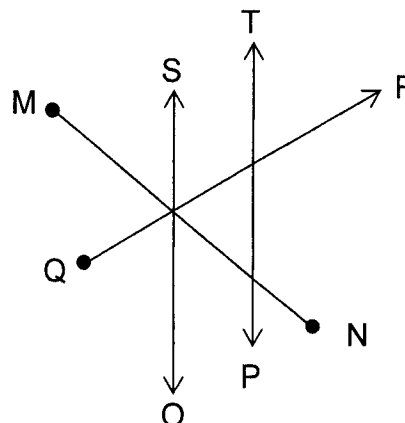
Directions: Read each question below. Circle the letter of the best answer.

1. This picture represents a –



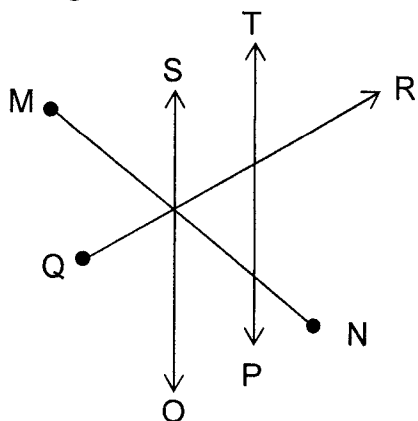
- A. Line segment
 B. Ray
 C. Line
 D. Plane

3. Look at the following picture.
-
- Which represents a ray?



- A. MN
 B. OS
 C. PT
 D. QR

2. Look at the following picture.
-
- Which represents a line segment?



- A. MN
 B. OS
 C. PT
 D. QR

4. This picture represents a –



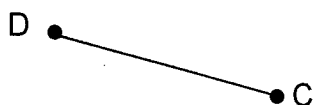
- A. Line segment
 B. Ray
 C. Line
 D. Plane

5. This picture represents a –



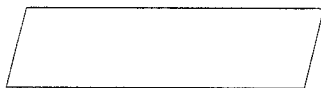
- A. Line segment
- B. Ray
- C. Line
- D. Point

6. This picture represents a –



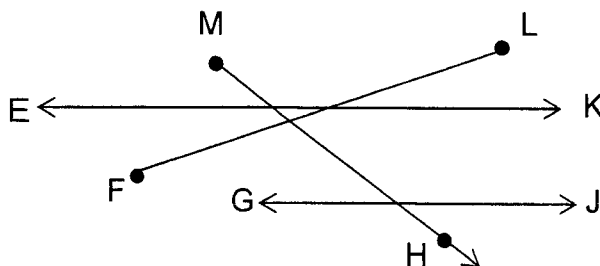
- A. Line segment
- B. Ray
- C. Line
- D. Point

7. This picture represents a –



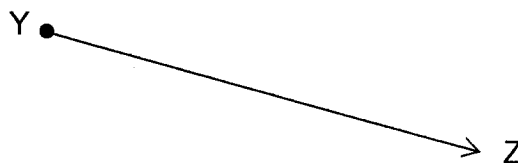
- A. Line segment
- B. Ray
- C. Line
- D. Plane

8. Look at the following picture.
Which represents a line segment?



- A. EK
- B. FL
- C. GJ
- D. H

9. This picture represents a –



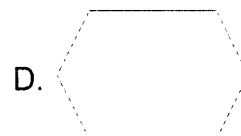
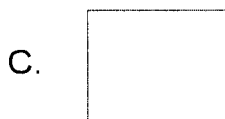
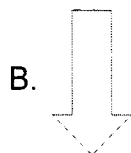
- A. Line segment
- B. Ray
- C. Line
- D. Plane

Name: _____

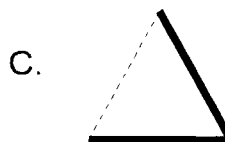
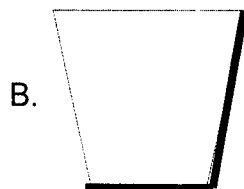
Perpendicular and Parallel Lines

Directions: Read each question below. Circle the best answer.

1. Which figure below has **no parallel** lines?



2. Look at each figure below. Which one shows **perpendicular** lines that have been highlighted?



3. How many pairs of **parallel** lines are in the figure below?



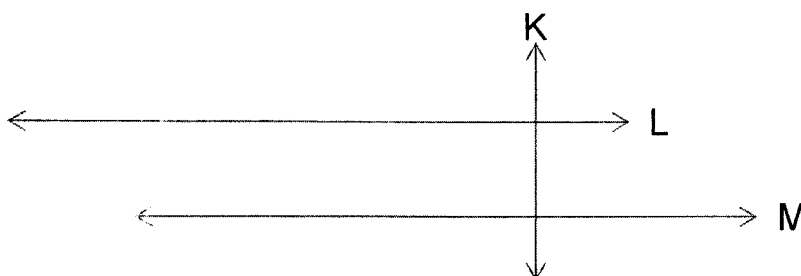
A. 0

B. 1

C. 2

D. 3

4. Look at the drawing below. Which 2 lines are **parallel**?



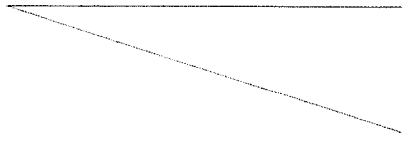
A. K and L

B. K and M

C. L and M

5. How many pairs of **perpendicular** lines are in the figure below?

Hint: How many right angles do you see?



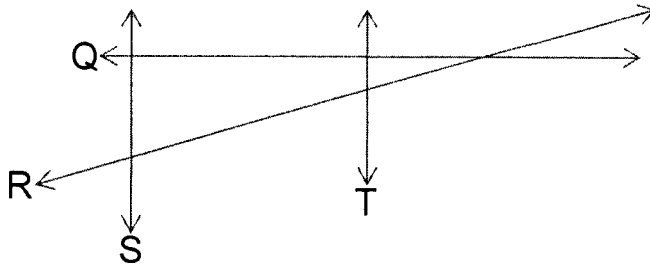
A. 0

B. 1

C. 2

D. 3

6. Look at the drawing below. Which 2 lines are **perpendicular**?



A. Q and R

B. Q and T

C. R and S

D. S and T

7. Which one of the following letters contains **parallel** lines?

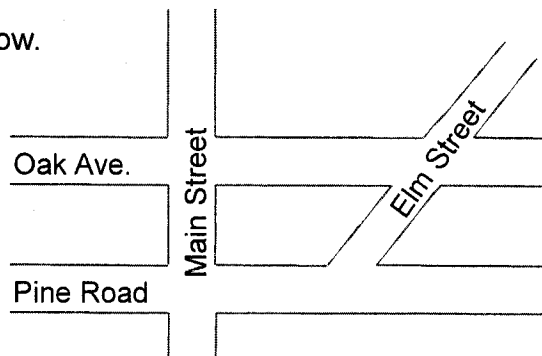
A. **M**

B. **T**

C. **K**

D. **Y**

8. Look at the map below.



Which street is **parallel** to Pine Road?

A. Oak Ave.

B. Main Street

C. Elm Street

Directions:

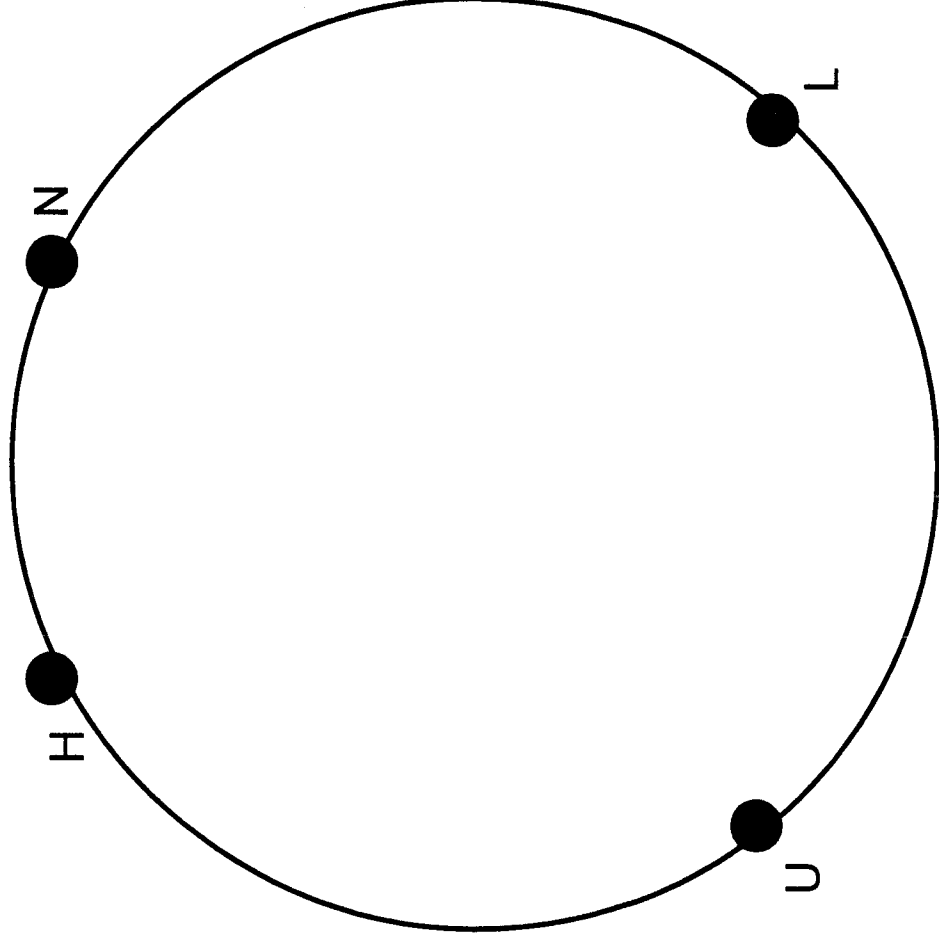
1. Draw a **POINT** that represents the middle of the circle. Label it "C."
2. Draw a **RAY** that starts at C and goes through H.
3. Draw a **LINE SEGMENT** that connects N to L.
4. Draw a **RAY** that starts at C and goes through N.
5. Draw a **LINE** that connects H and U.



Directions: Create your own directions to build a letter with geometric terms

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

Name: _____



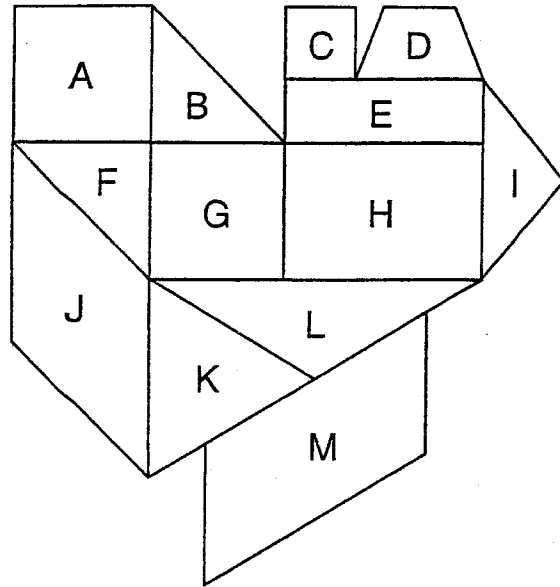
1. What letter is formed by the drawing? _____
2. What word is formed by the letters representing the 5 **POINTS** in the picture?

Name _____

Doodles

E 8-4
VISUAL THINKING

Darius made this doodle while talking on the phone. Name each shape Darius drew. Be as specific as possible.



A. _____

B. _____

C. _____

D. _____

E. _____

F. _____

G. _____

H. _____

I. _____

J. _____

K. _____

L. _____

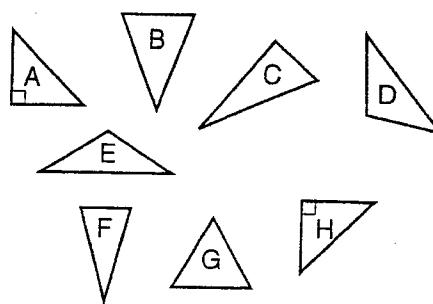
M. _____

Name _____

Triangles and Quadrilaterals

PS 8-4

Look closely at the triangles. Notice how they are similar and different. Use the triangles for 1–6. The same triangle may be used to answer more than one question.



1. Which triangles are isosceles?

2. Which triangles are scalene?

3. Are any of the triangles equilateral? If so, which one or ones?

4. Which triangles are right?

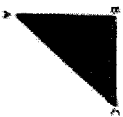
5. Which triangles are acute?

6. Which triangles are obtuse?

7. **Writing in Math** How is a square similar to a rectangle?
How is a square different from a rectangle? Would you say a rectangle is a special type of square? Or is a square a special type of rectangle? Explain.

Standard: 4.G.2.2.0 - Classify two-dimensional figures based on the presence or ab...

Look at the triangle below. Which angle is right?



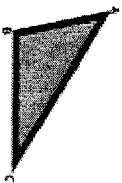
Look at the triangle below. Which angle is acute?



Choose one: [$\angle ABC$ | $\angle BCA$ | $\angle CAB$ | $\angle ABC$ and $\angle BCA$ | $\angle BCA$ and $\angle CAB$ | $\angle CAB$ and $\angle ABC$]

Choose one: [$\angle ABC$ | $\angle BCA$ | $\angle CAB$ | $\angle ABC$ and $\angle BCA$ | $\angle BCA$ and $\angle CAB$ | $\angle CAB$ and $\angle ABC$]

Is this triangle a right, acute or obtuse triangle?



Is this triangle a right, acute or obtuse triangle?



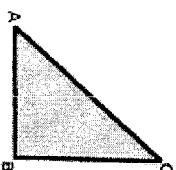
Choose one: [right triangle | acute triangle | obtuse triangle]

Choose one: [right triangle | acute triangle | obtuse triangle]

Look at the triangle below. Which angle is obtuse?



Look at the triangle below. Which angle is acute?



Choose one: [$\angle ABC$ | $\angle BCA$ | $\angle CAB$ | $\angle ABC$ and $\angle BCA$ | $\angle BCA$ and $\angle CAB$ | $\angle CAB$ and $\angle ABC$]

Choose one: [$\angle ABC$ | $\angle BCA$ | $\angle CAB$ | $\angle ABC$ and $\angle BCA$ | $\angle BCA$ and $\angle CAB$ | $\angle CAB$ and $\angle ABC$]

Printable

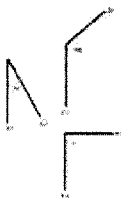
Created on 01/14/2015

Serial # 7586921

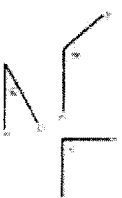
8-4cc

Standard: 4.G.2-2.1 - Draw and identify angles (right, acute, obtuse).

Which angle is a(n) right angle?



Which angle is a(n) acute angle?



Choose one: [<ABC | <XYZ | <QRS]

Choose one: [<ABC | <XYZ | <QRS]

In a square, all four angles are the same. Are they right, acute or obtuse angles?



Which angle is a(n) obtuse angle?



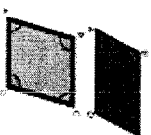
Choose one: [right | acute | obtuse]

Choose one: [<ABC | <XYZ | <QRS]

Which angle is obtuse? (Hint: Check to make sure that you found all of the obtuse angles!)



In a parallelogram, two angles are acute and two are obtuse. Which angles are acute in the parallelograms below?



Choose one: [<ABC | <BCA | <CAB | <ABC and <BCA]

Choose one: [<DAB and <BCD | <CDA and <ABC | <DAB

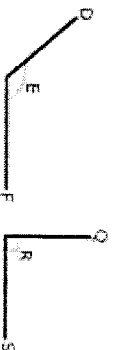
Standard: 4.G.1-2.1 - Define an angle

Which angle is smaller?



Choose one: [$\angle DEF$ | $\angle ABC$]

Which angle is the obtuse angle?



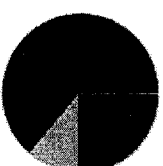
Choose one: [$\angle DEF$ | $\angle QRS$]

Which angle is the obtuse angle?



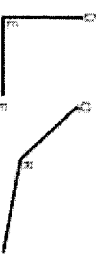
Choose one: [$\angle WXY$ | $\angle ABC$]

Dad cut a blueberry pie into uneven slices. If you're pretty full and want the smallest slice do you tell Dad you want the one that makes a right, acute, or obtuse angle?



Choose one: [right | acute | obtuse]

Which angle is larger?



Choose one: [$\angle DEF$ | $\angle QRS$]

Which angle is smaller?



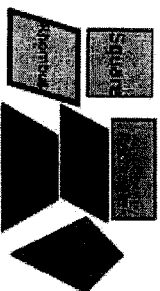
Choose one: [$\angle ABC$ | $\angle XYZ$]

Mom cut an apple pie into uneven slices. If you want the biggest slice do you tell Mom you want the one that makes a

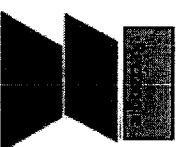
Dad cut a blueberry pie into uneven slices. If you're pretty full and want the smallest slice do you tell Dad you want the one

Standard: 4.G.2-1.0 - Classify two-dimensional figures based on the presence or ab...

I have 4 sides. My opposite sides are parallel. I have four right angles. Which shape can I be?



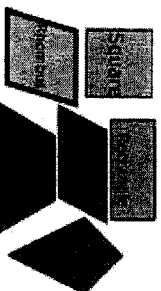
Which of these shapes has only one pair of parallel lines?



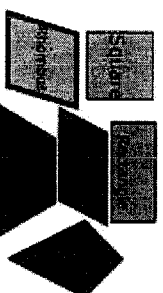
Choose one: [Rectangle | Trapezoid | Parallelogram]

Choose one: [Trapezoid | Parallelogram | Rectangle]

I have 4 sides. I have only one set of parallel sides. Which shape am I?



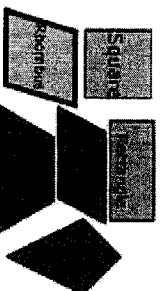
I have 4 sides. All four of my sides are the same length. I have no right angles. Which shape am I?



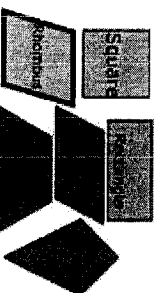
Choose one: [Rectangle | Trapezoid | Parallelogram]

Choose one: [Rectangle | Triangle | Rhombus]

I have 4 sides. Only my opposite sides are the same length as each other. I have 4 right angles. Which shape am I?



I have 4 sides. All four of my sides are the same length. My sides are perpendicular. Which shape am I?



Circles

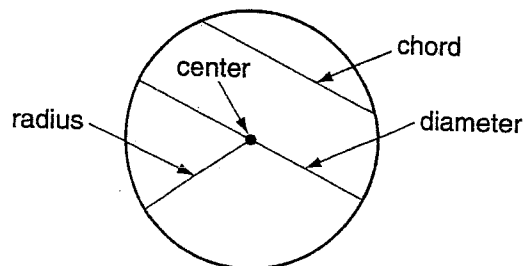
R 8-5

A circle is made up of all points that are the same distance from the center point.

A radius connects the center to any point on the circle.

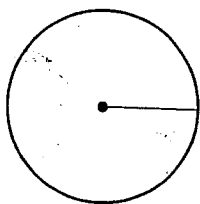
A chord connects any two points on the circle.

A diameter connects two points on the circle and passes through the center of the circle.

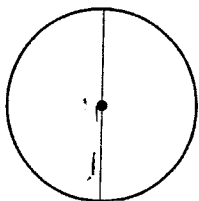


State whether the line segment shown is a radius, a chord, or a diameter.

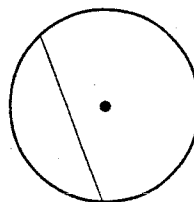
1.



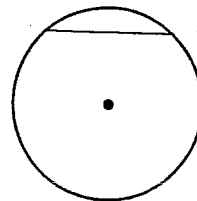
2.



3.



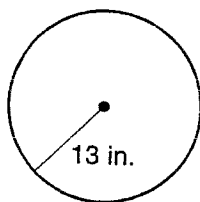
4.



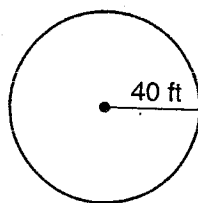
5. **Writing in Math** How is a chord different from a radius?

For each circle shown, find the length of the diameter.

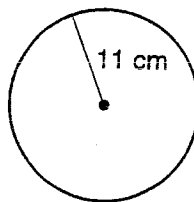
6.



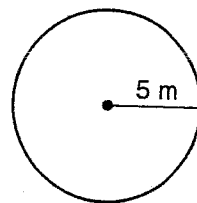
7.



8.



9.

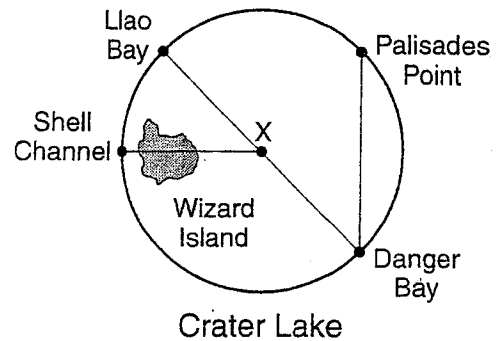


Name _____

Circles

PS 8-5

Crater Lake Crater Lake National Park in Oregon is home to the deepest lake in the United States. The drawing shows a simplified, circular version of Crater Lake.



1. Which type of line segment connects Danger Bay and Llao Bay?

2. Which type of line segment connects Palisades Point and Danger Bay?

3. Which type of line segment connects the center of Crater Lake and Shell Channel?

Use what you know about the radius and the diameter of a circle to complete 4–5.

4. The radius of a circle is 16 in. How long is its diameter?

5. Suppose circle A has a radius that equals the diameter of circle B. Does the radius of circle B equal half the radius of circle A?

6. **Writing in Math** A chord connects any two points on a circle. Explain why every diameter is also a chord but not every chord is a diameter.

Name: _____

Measuring Angles

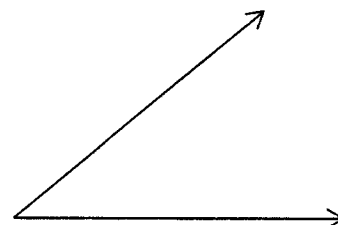
Directions: Read each question below. Circle the best answer.

1. What is a reasonable measurement for the following angle?



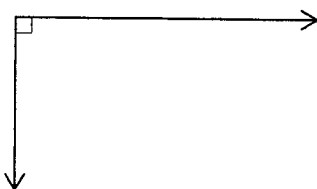
- A. 36°
- B. 45°
- C. 95°
- D. 136°

3. What is a reasonable measurement for the following angle?



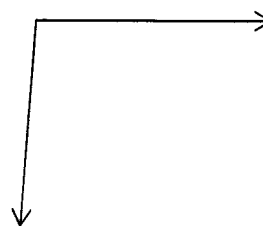
- A. 30°
- B. 40°
- C. 90°
- D. 135°

2. What is a reasonable measurement for the following angle?



- A. 80°
- B. 90°
- C. 100°
- D. 110°

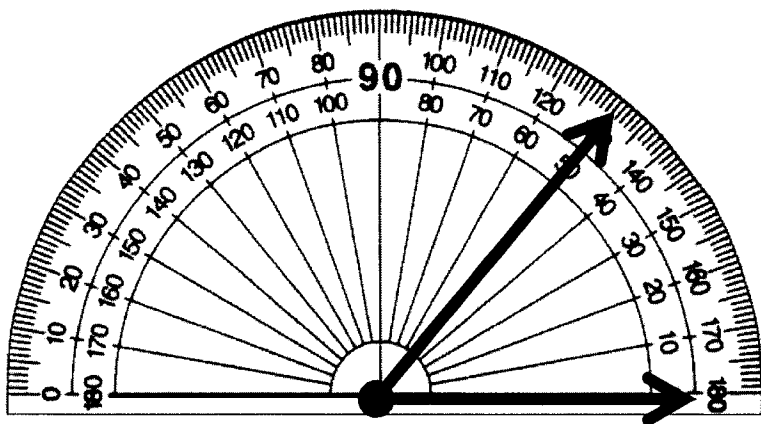
4. What is a reasonable measurement for the following angle?



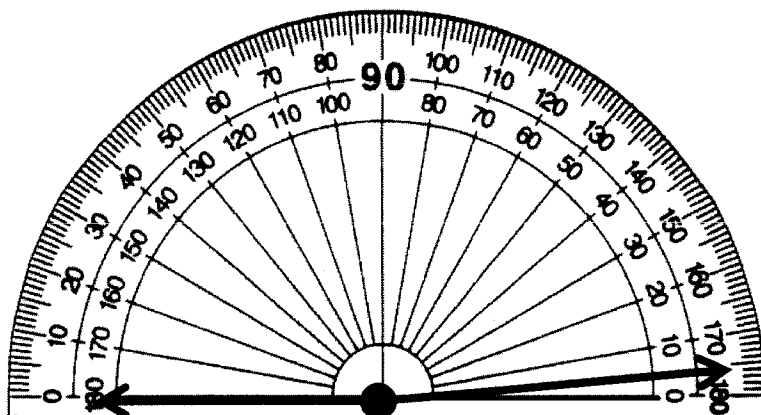
- A. 20°
- B. 65°
- C. 95°
- D. 180°

Directions: Use the protractor provided to measure each angle below. Write the angle measurement on the line.

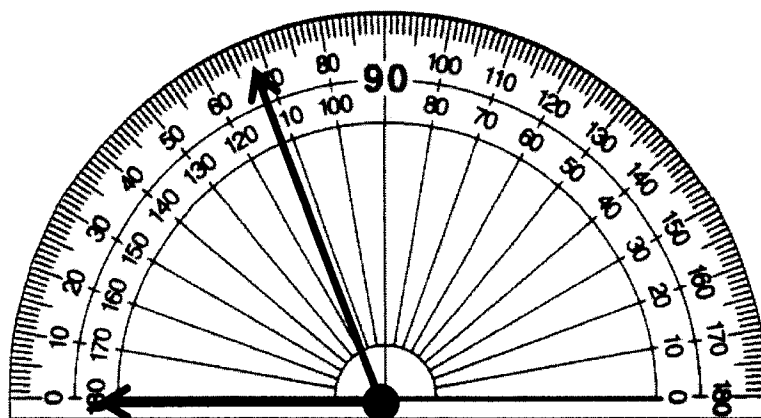
5. What is a reasonable measurement for the following angle?



6. What is a reasonable measurement for the following angle?



7. What is a reasonable measurement for the following angle?



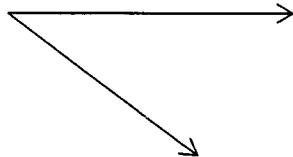
KM2

Directions: Use a protractor to measure each angle below. Write the angle measurement on the line.

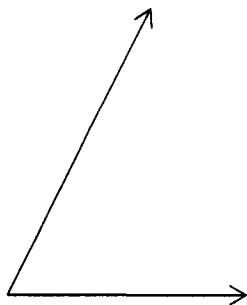
8. What is a reasonable measurement for the following angle?



9. What is a reasonable measurement for the following angle?



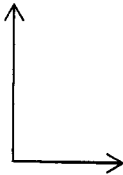
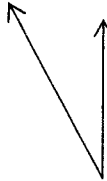

10. What is a reasonable measurement for the following angle?



Name : _____

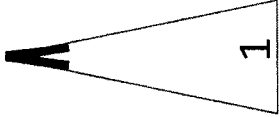
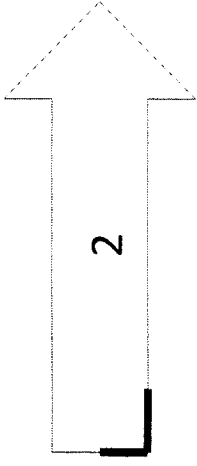
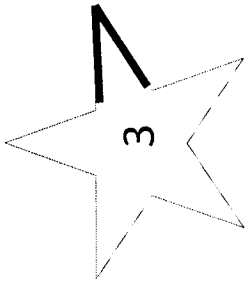
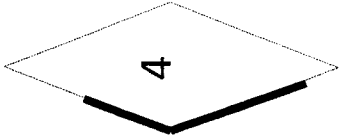
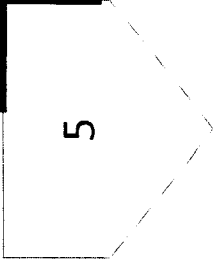
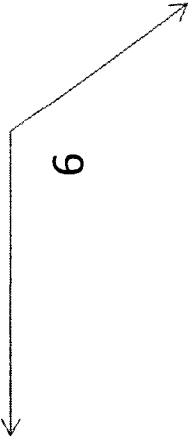
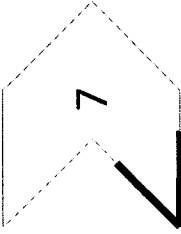
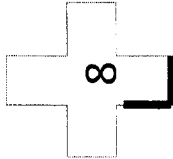

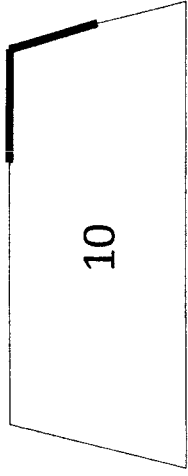
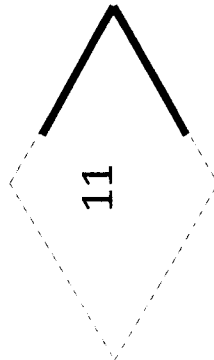
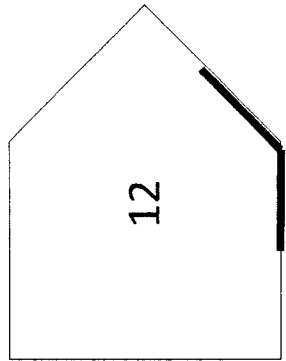
Classify Angles

Directions: Glue each figure under the correct type of angle. An example of each has been done for you.

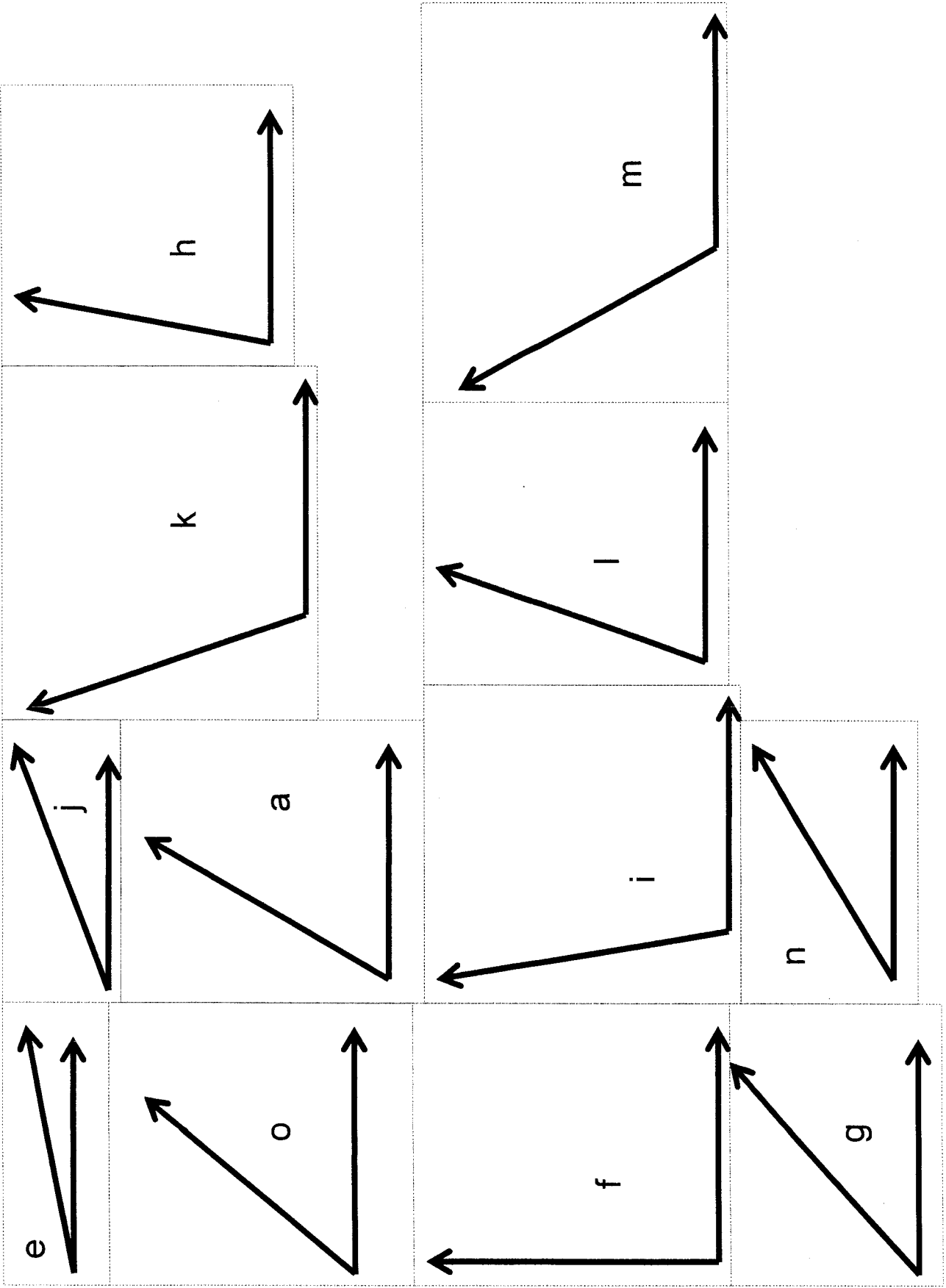
Right Angles	Acute Angles	Obtuse Angles
		

Classify Angles

Directions: Cut out each figure below. Classify the angle as a right angle, an acute angle, or an obtuse angle. Glue the figure underneath the correct type of angle.

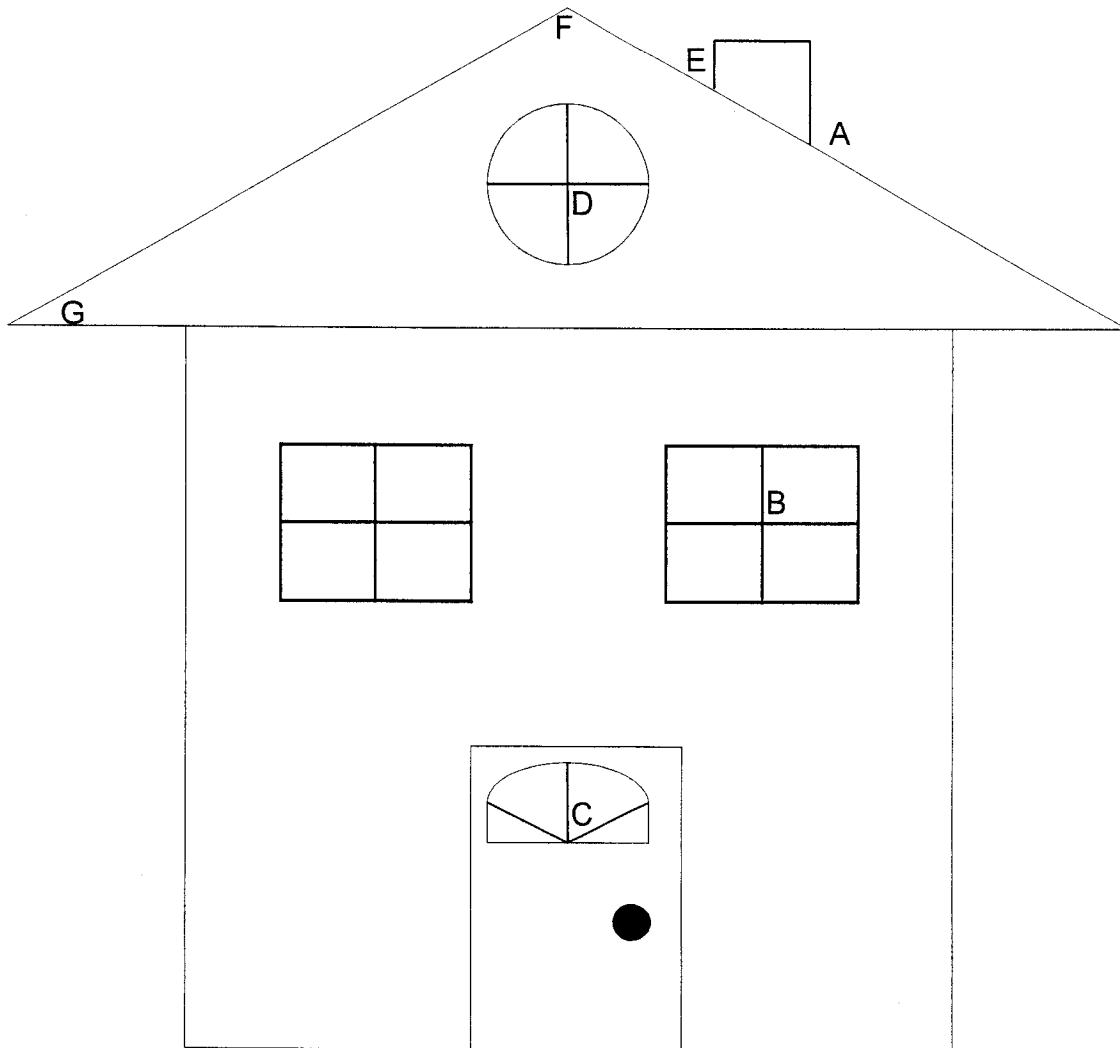
			
			
			

10°	20°	30°	40°	50°	60°	70°
80°	90°	100°	110°	120°	130°	140°
150°	160°	170°				



Name: _____

The house below contains many kinds of angles. Look at the angles that have been labeled with letters. Classify each labeled angle as acute, right, or obtuse. Choose 4 labeled angles, and measure them with a protractor.

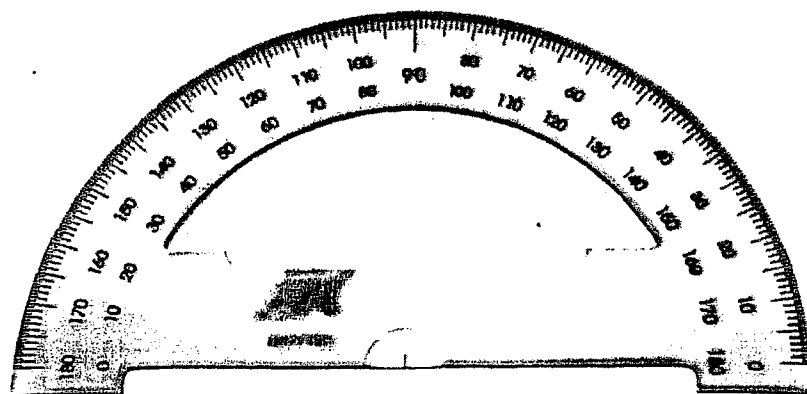
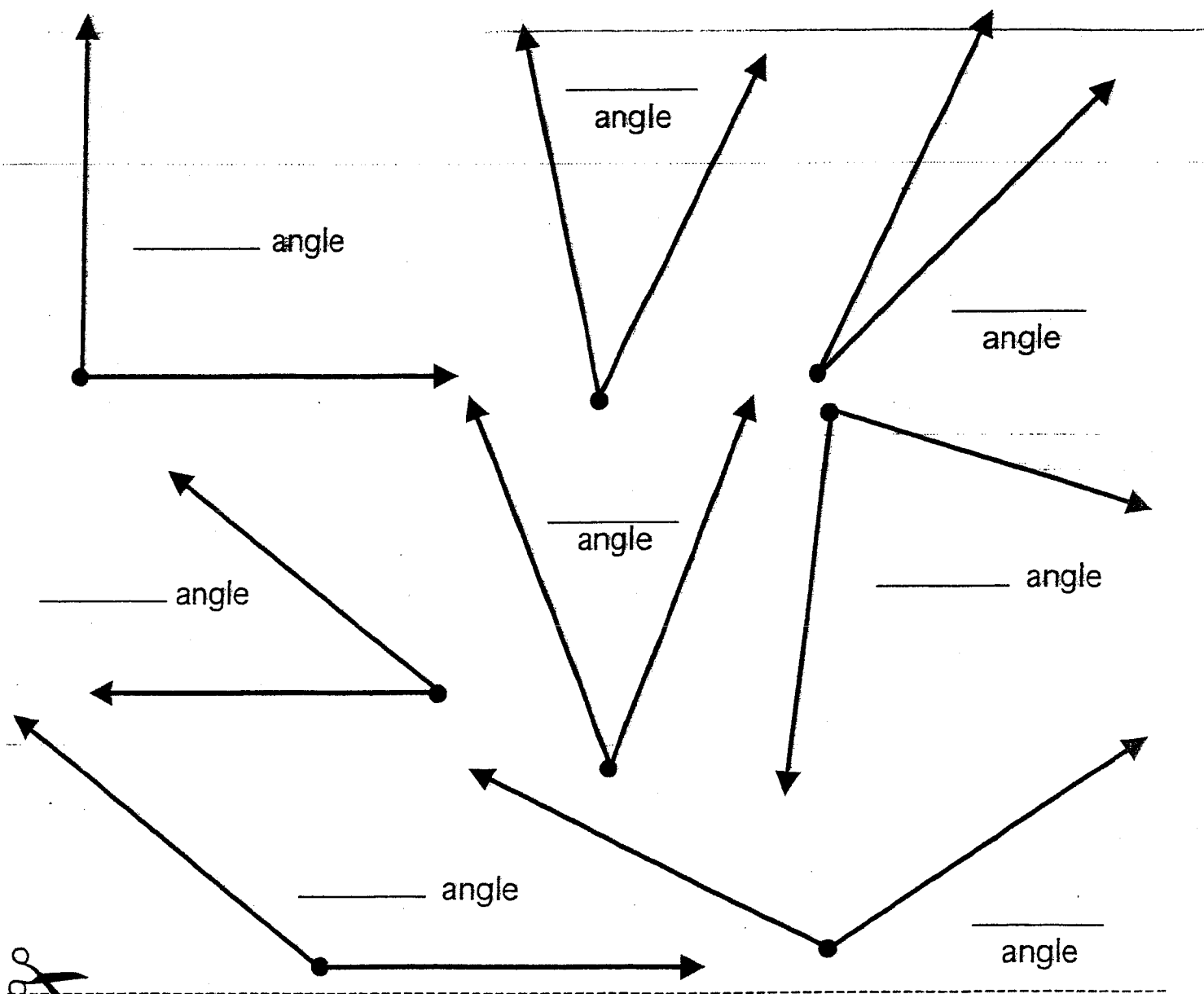


Let's Measure!

Name _____

Date _____

Carefully cut out the protractor at the bottom of the page and use it to measure these right, acute, and obtuse angles. Write the angle measurements on the lines.

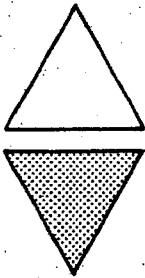


Name _____

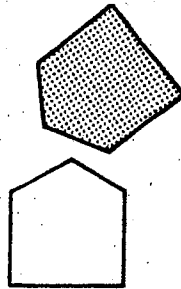
SLIDES, FLIPS, AND TURNS

The shaded figure shows how the figure was moved.
Write **slide**, **flip**, or **turn**. Tell how the figure was moved.

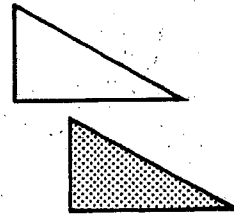
1.



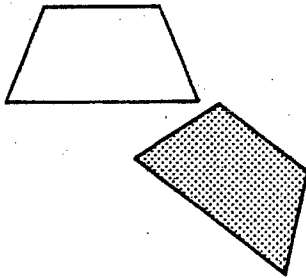
2.



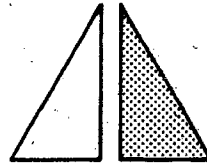
3.



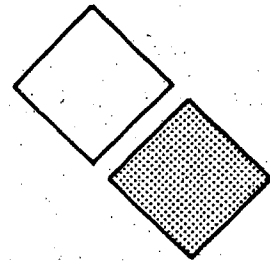
4.



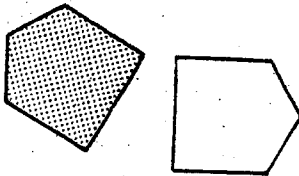
5.



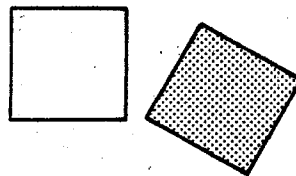
6.



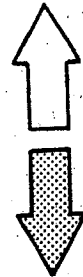
7.



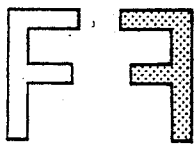
8.



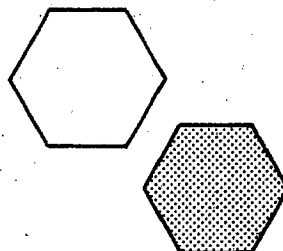
9.



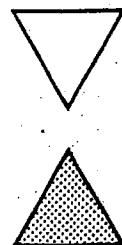
10.



11.



12.

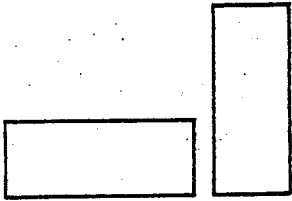


Name _____

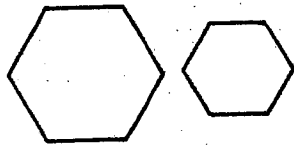
CONGRUENCE

Tell whether the two figures are congruent.

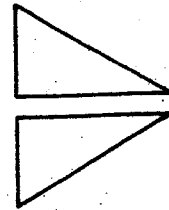
1.



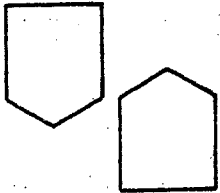
2.



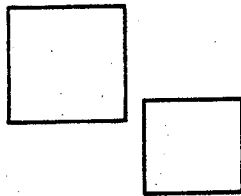
3.



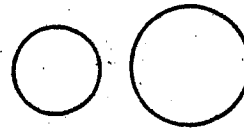
4.



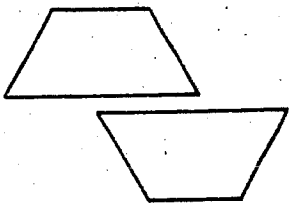
5.



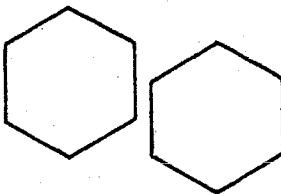
6.



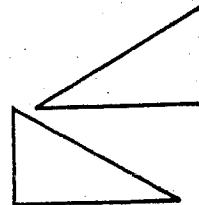
7.



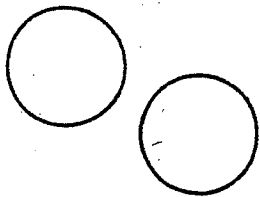
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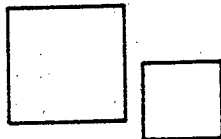
9.



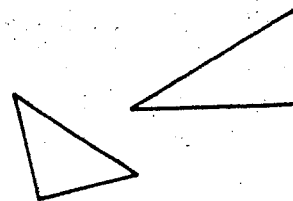
10.



11.



12.



Solve.

13. Donna bought an oval tablecloth to cover a table of the same shape. The tablecloth is bigger. Are the table and the tablecloth congruent?
- _____

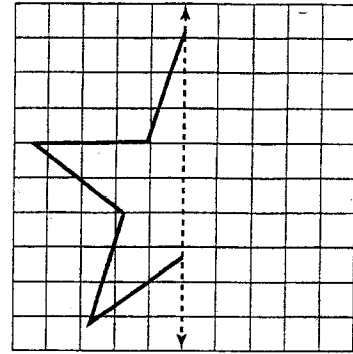
14. All of the doors in Greg's house are the same shape. Are the doors congruent?
- _____
- _____

Name _____

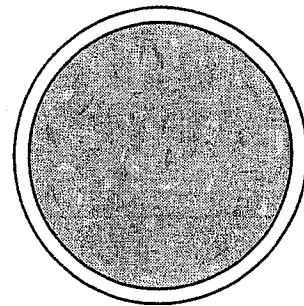
Symmetry

PS 8-7

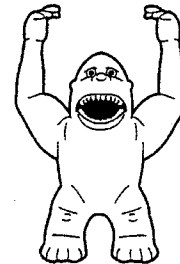
1. Draw the right half of the star on the grid paper. Make the star symmetric. Then tell how many lines of symmetry it has.



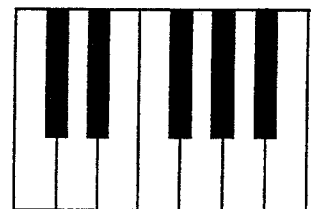
2. Is the cheese pizza shown symmetric? If it is, how many lines of symmetry does it have?



3. Look at the drawing of the gorilla. Is it symmetric? If it is, how many lines of symmetry does it have?



4. Look at the drawing of part of a piano keyboard. Is it symmetric? If it is, how many lines of symmetry does it have?



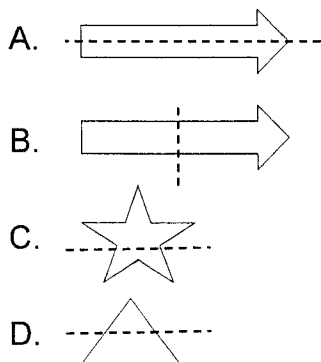
5. **Writing in Math** Is there any other figure besides a circle that has an infinite number of lines of symmetry? Explain.

Name: _____

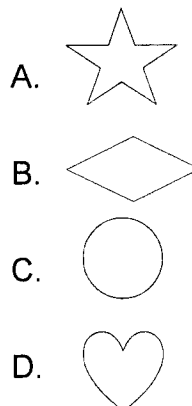
Symmetry

Directions: Read each problem below. Circle the letter of the best answer.

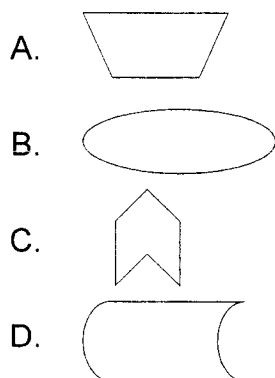
1. Which picture shows a line of symmetry?



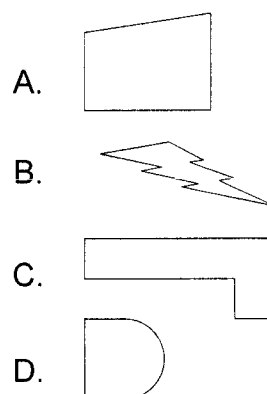
3. Which figure has **only 1** line of symmetry?



2. Which figure has **more than 1** line of symmetry?



4. Which figure has a line of symmetry?

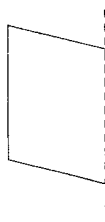


Directions: Complete each figure so that it is symmetrical.

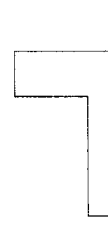
5.



6.

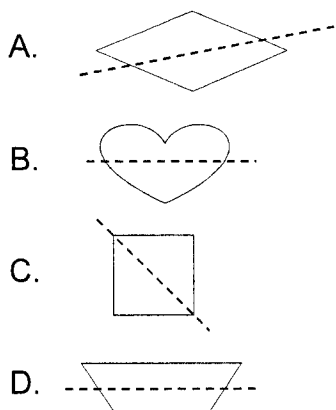


7.

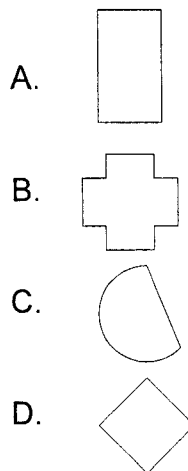


Directions: Read each problem below. Circle the letter of the best answer.

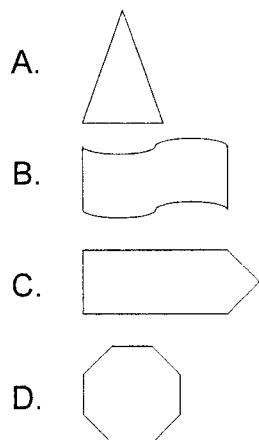
8. Which picture shows a line of symmetry?



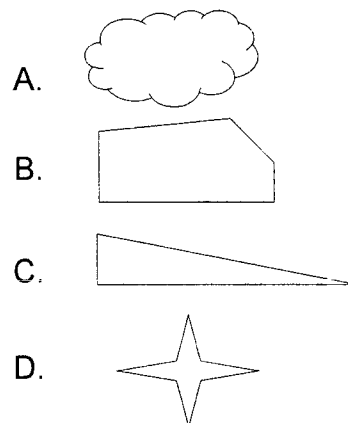
10. Which figure has **only 1** line of symmetry?



9. Which figure has **more than 1** line of symmetry?

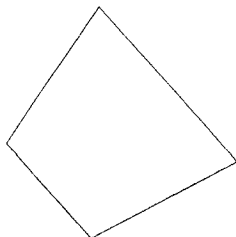


11. Which figure has a line of symmetry?

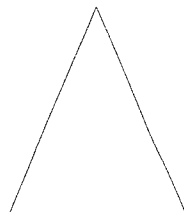


Directions: Draw a line of symmetry for each figure below.

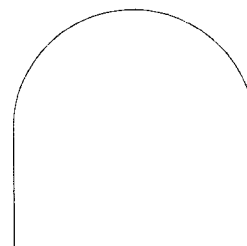
12.



13.



14.

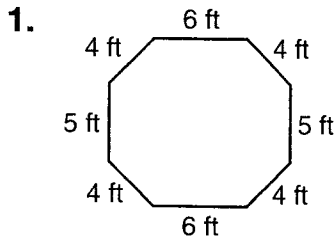


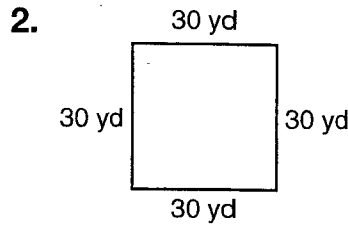
Name _____

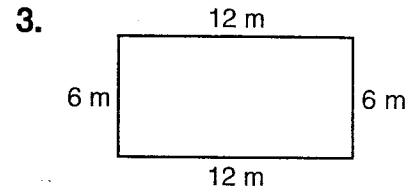
Perimeter

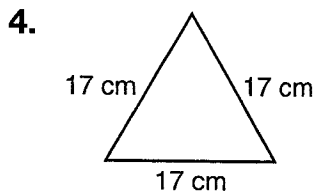
P 8-10

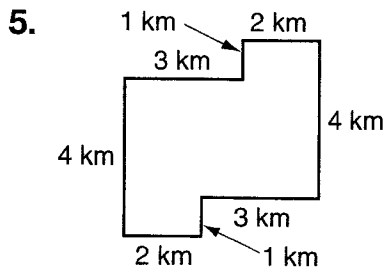
Find the perimeter of each figure.

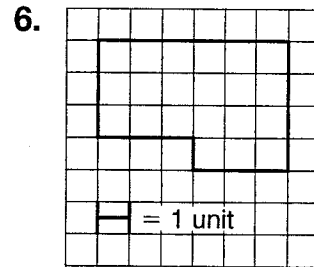




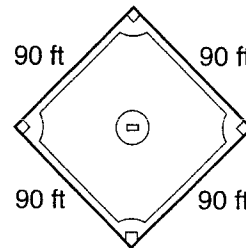








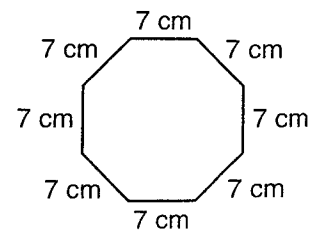
7. What is the perimeter around the bases?



Test Prep

8. Which is the perimeter of this figure?

- A. 77 cm B. 63 cm
C. 56 cm D. 28 cm

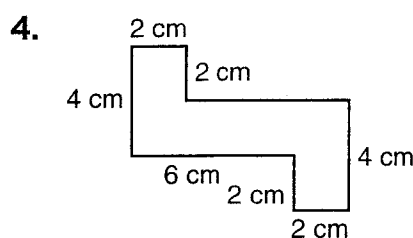
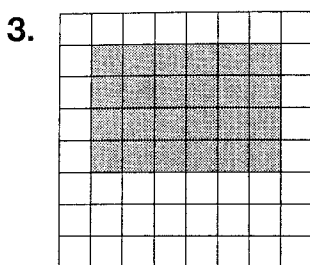
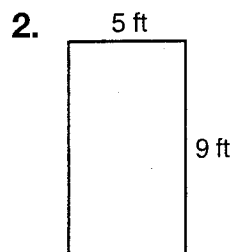
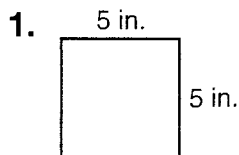


9. **Writing in Math** Explain how you can use multiplication to find the perimeter of a square.

Area

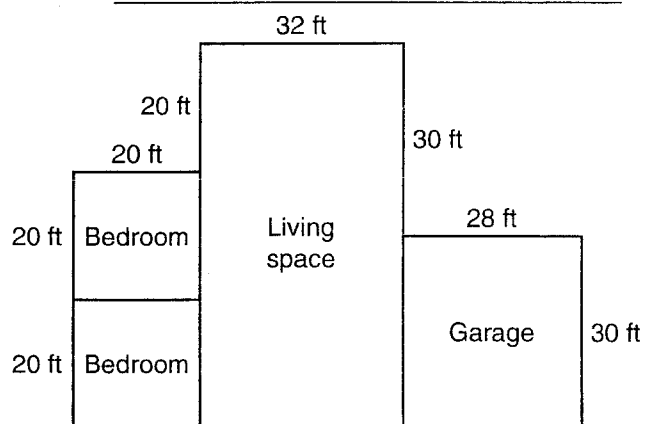
P 8-11

Find the area of each figure.



5. What is the area of both the bedrooms?
- _____

6. What is the area of the whole house?
- _____



Test Prep

7. Which is the area of a rectangle with a length of 26 cm and a width of 34 cm?

A. 992 cm

B. 884 cm

C. 720 cm

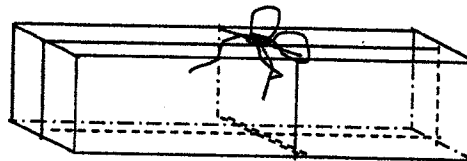
D. 324 cm

8. **Writing in Math** Explain how you would find the length of one side of a square if the area is 16 square units.
- _____

Perimeter Matters

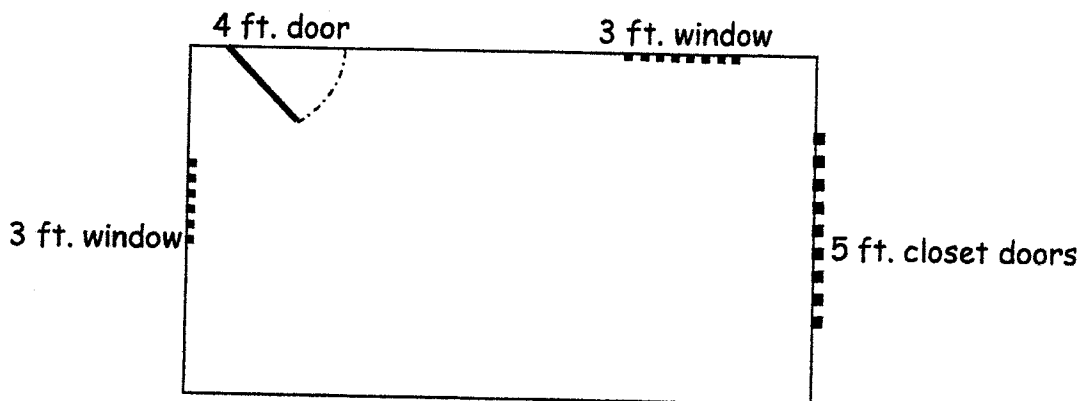
1. Marta wants to tie a ribbon around the sides of a hexagonal box and then tie a bow. Each side of the box is 4 inches long. She needs 14 inches for the bow. Is one yard of ribbon enough? Explain. Then state exactly how long the ribbon must be.

2. Caryn needs to ship a box that is 14" high, 12 inches deep and 24 inches long. After sealing the box, she tied it with twine as shown:



How much twine does she need if the bow uses 12 inches of twine?

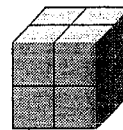
2. Shawndolyn is remodeling her daughter's room. She plans to put a border around the room at waist height and another border around the ceiling. The diagram shows the layout of the 12' X 8' room. There will be no gaps in the ceiling border. How many feet of border does Shawndolyn need?



Volume

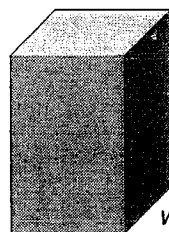
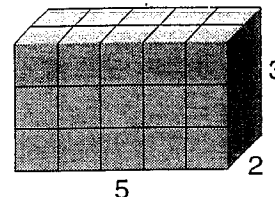
R 8-13

The number of cubic units needed to fill a solid figure is its volume. To find the volume of a solid figure, you can count each cube. The figure to the right has a volume of 8 cubic units.



You can also use multiplication to find the volume of a solid figure.

You can use the formula $V = lwh$.

 h = height of figure w = width of figure l = length of figureVolume = length \times width \times height

$$V = lwh$$

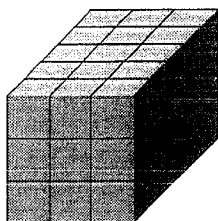
$$V = 5 \times 2 \times 3$$

$$= 30$$

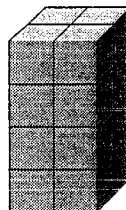
The volume is 30 cubic units.

Find the volume of each figure.

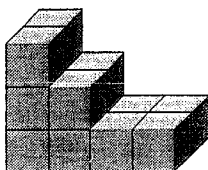
1.



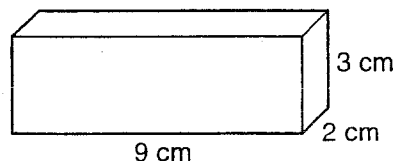
2.



3.



4.



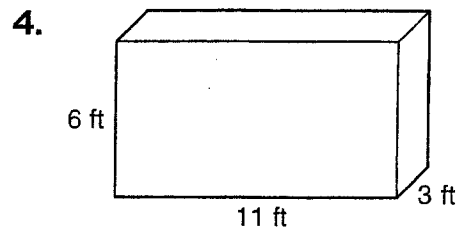
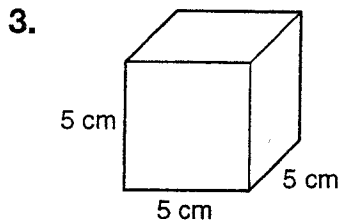
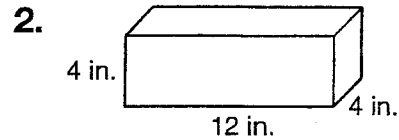
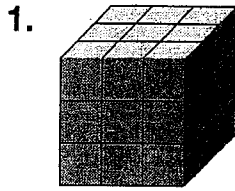
5. **Reasoning** A box with dimensions 4 in. by 4 in. by 4 in. is placed inside a box with dimensions 6 in. by 6 in. by 6 in. How much space is left inside the larger box after the smaller box is put inside?

Name _____

Volume

P 8-13

Find the volume of each figure.



5. A rectangular prism has a length of 7 cm, a width of 4 cm, and a height of 3 cm. What is the volume of the prism?
- _____

6. **Reasoning** The length of an edge of a cube is 5 ft. What is the total volume of two cubes of the same size?
- _____

7. If a cube has a volume of 64 cubic units, how many bricks are in each row?
- _____

Test Prep

8. What is the volume of a cube that has an edge of 7 yd?
- A. 343 cubic yd B. 98 cubic yd C. 49 cubic yd D. 21 cubic yd
9. **Writing in Math** If you know that a rectangular prism has a length of 256 m and a width of 192 m, can you find its volume? Explain your answer.
- _____
- _____

Chapter 8A Review

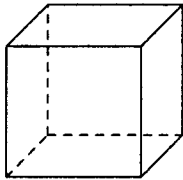
Multiple Choice

Identify the letter of the choice that best completes the statement or answers the question.

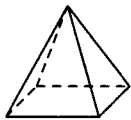
- ____ 1. Name the solid figure.



- a. cylinder
b. rectangular prism
c. cone
d. triangular prism
- ____ 2. How many edges does a cube have?



- a. 6 edges b. 8 edges c. 12 edges d. 14 edges
- ____ 3. How many faces does a square pyramid have?

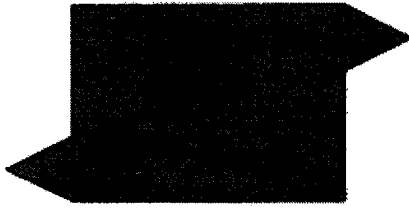


- a. 4 faces b. 5 faces c. 6 faces d. 10 faces

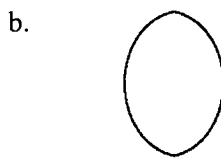
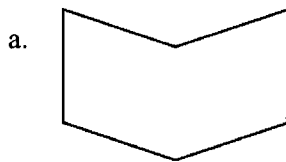
Name: _____

ID: A

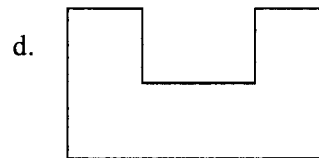
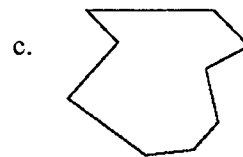
- _____ 4. Shamika is making a model. She drew the net below. If she cut it out and taped it together, which solid would she make?



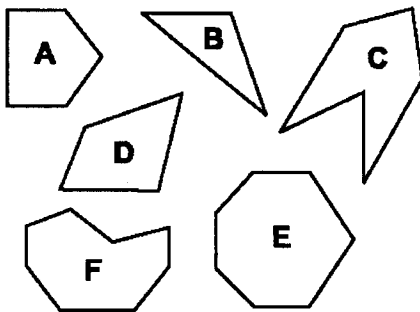
- a. triangular prism
b. rectangular prism
_____ 5. Which figure is NOT a polygon?



- c. cylinder
d. rectangular pyramid



- _____ 6. Which figure is an example of a hexagon?



- a. Figure E b. Figure A c. Figure F d. Figure C
_____ 7. What is the name of a polygon with 8 sides?

- a. quadrilateral b. hexagon c. pentagon d. octagon

Name: _____

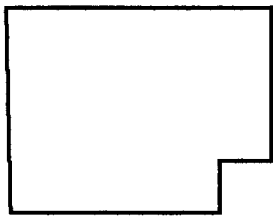
ID: A

____ 8. What shape is the traffic sign?



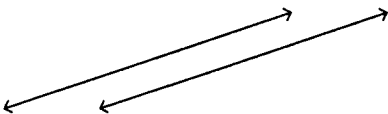
- a. octagon b. hexagon c. pentagon d. triangle

____ 9. The shape of Huron County, Ohio is shown below. What shape is it?



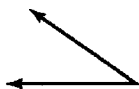
- a. hexagon b. triangle c. octagon d. pentagon

____ 10. What type of lines are shown?



- a. rays c. intersecting
b. perpendicular d. parallel

____ 11. What type of angle is shown?



- a. straight b. right c. obtuse d. acute

- _____ 12. What geometric figure is shown?

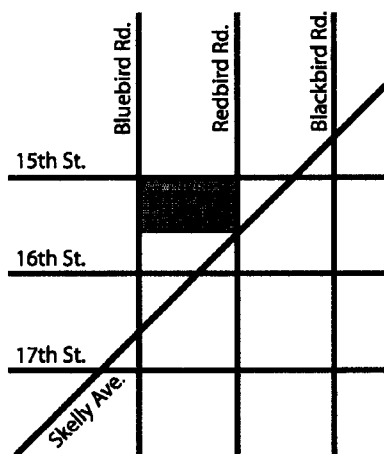


- a. ray
b. point
c. line
d. line segment
- _____ 13. What type of angle is formed by the hands on the clock?



- a. obtuse
b. right
c. straight
d. acute
- _____ 14. Rosie is using the map below to get to the Shopping Center.

Which of these roads is parallel to Bluebird Rd.?

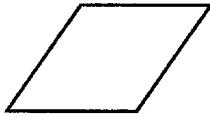


- a. 16th St.
b. Blackbird Rd.
c. 17th St.
d. Skelly Ave.
- _____ 15. Classify the triangle by its sides and then by its angles.

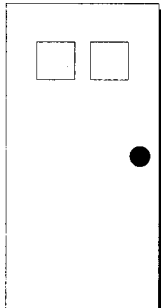


- a. isosceles and acute
b. isosceles and right
c. isosceles and obtuse
d. scalene and acute

___ 16. Classify the quadrilateral.



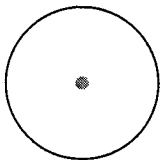
- ___ 17. Which quadrilateral always has four right angles?
- a. square b. trapezoid c. rectangle d. rhombus
- ___ 18. What shape are the designs on the door?



- a. trapezoids c. pentagons
- b. squares d. parallelograms
- ___ 19. What shape has been used to form the tile pattern below?



- a. rectangles c. trapezoids
- b. parallelograms d. squares
- ___ 20. Use a geometric term to describe what is shown in gray.

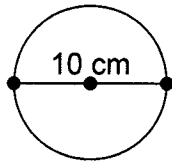


- a. chord b. diameter c. radius d. center
- ___ 21. What word completes the sentence?

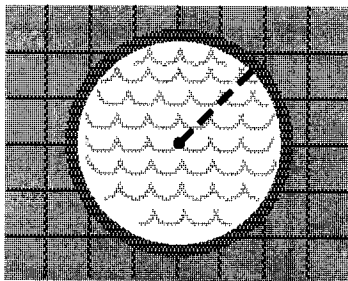
A ___?___ is any line segment that connects the center to a point on the circle.

- a. radius b. circle c. chord d. diameter

____ 22. How long is the radius of the circle?



- a. 5 cm b. 10 cm c. 15 cm d. 20 cm
- ____ 23. Melvin swam the length of the pool that is marked. What part of the circle did he swim?



- a. radius c. chord
b. diameter d. circumference
- ____ 24. Money has been used in the United States for many years. The United States Mint put its first coins, the copper cents, into circulation in March 1793.

Use the table below. What is the radius of a quarter?

COINS USED IN THE UNITED STATES

Coin	Approximate Distance Across
Penny	19 millimeters
Nickel	21 millimeters
Dime	18 millimeters
Quarter	24 millimeters
Half Dollar	30 millimeters
Dollar	26 millimeters

- a. 12 mm b. 18 mm c. 24 mm d. 48 mm

Chapter 8B Review

Multiple Choice

Identify the letter of the choice that best completes the statement or answers the question.

____ 1.



Which figure is NOT congruent to the one above?

a.



b.



c.

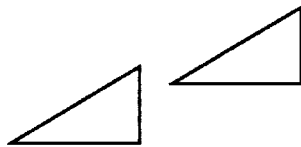


d.

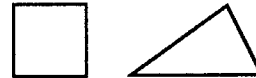


____ 2. Which pair of figures are congruent?

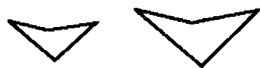
a.



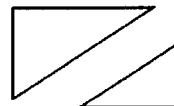
c.



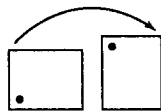
b.



d.



____ 3. How are the figures related?



a. turn

c. slide

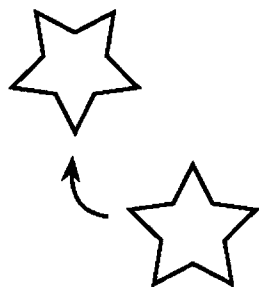
b. reflection

d. flip

Name: _____

ID: A

- _____ 4. A five-pointed star is used in many different national flags. The United States flag has 50 five-pointed stars. There is one star for each of the fifty states. How has the star below been moved?

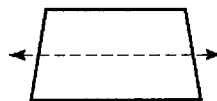


- a. flip
b. slide
c. reflection
d. turn
- _____ 5. Which dotted line is a line of symmetry?

a.



c.



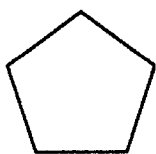
b.



d.



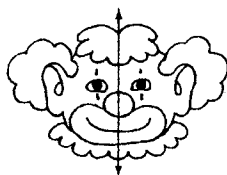
- _____ 6. How many lines of symmetry does the figure have?



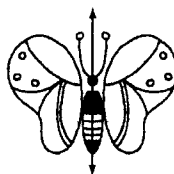
- a. 3
b. 5
c. 1
d. 4
- _____ 7. How many lines of symmetry does a right isosceles triangle have?
- a. 3
b. 1
c. 0
d. 2

- _____ 8. The art teacher gave each student a sheet of paper with half a drawing on it. Each student's assignment was to finish the drawing by making the right side of the drawing symmetric to the left side. Which drawing is NOT symmetric?

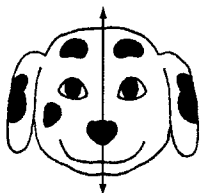
a.



c.






b.



d.



- _____ 9. Maps often use symbols to represent locations. A list of possible symbols and their meanings are shown below.

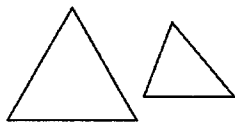
Symbol	Meaning
H	Hospital
	Airport
	Roadside Park
	State Capital

How many lines of symmetry does the symbol for a roadside park have?

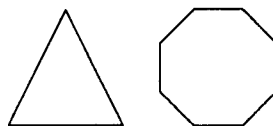
- a. 2
b. 0
c. 3
d. 1

____ 10. Which pair appear to be similar?

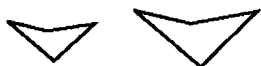
a.



c.



b.



d.



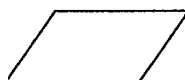
____ 11. Which appears to be similar to the figure below?



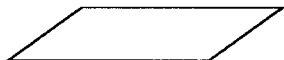
a.



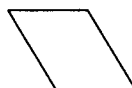
c.



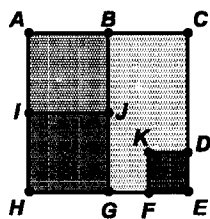
b.



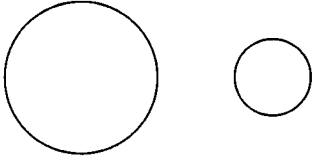
d.



____ 12. Quo used squares to draw the following design. Name a square that appears to be similar but NOT congruent to $ABJI$.

a. square $ABGH$ c. square $ACEH$ b. square $BCEG$ d. square $IJGH$

- _____ 13. During art class, Mrs. Moore gave each student patterns of the two shapes shown below. The students' assignment was to make a picture using only the two shapes. How are the two shapes related?



- a. The two are similar, but NOT congruent.
 - b. The two are similar and congruent.
 - c. The two are NOT similar.
 - d. The two are congruent, but NOT similar.
- _____ 14. Which statement does NOT describe the figures?



- a. Both angles are formed by intersecting lines.
- b. One figure is an an acute angle.
- c. One figure is an an obtuse angle.
- d. Both figures are angles.

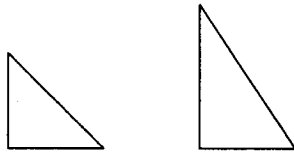
_____ 15. Which statement does NOT describe the tables?

Number of Dollars	2	3	4	5
Number of Pennies	200	300	400	500

Number of Dollars	2	3	4	5
Number of Quarters	8	12	16	20

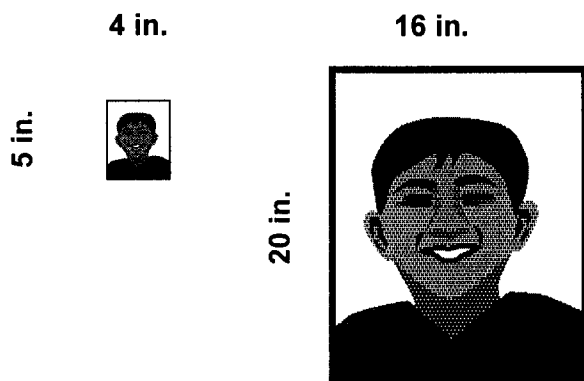
- a. The top table's rule is multiply by 100.
- b. The bottom table's rule is multiply by 4.
- c. As the number of dollars increases, the number of pennies and the number of quarters increase.
- d. The number of quarters is always greater than the number of pennies for each dollar amount.

_____ 16. Which statement does NOT describe the figures?

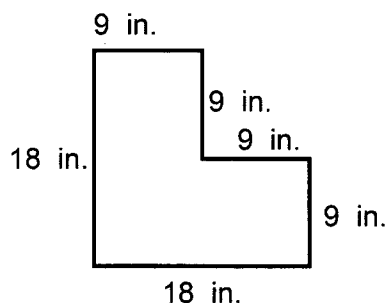


- a. One figure is an isosceles triangle and the other is a scalene triangle.
- b. Both figures are right triangles.
- c. The figures are similar.
- d. Each figure has 3 sides.

- _____ 17. Peter wants to give his grandmother a school picture. The two pictures he has to choose from are shown below. Which statement does NOT describe the two pictures?



- a. The width of the second picture is 4 times the width of the first.
b. The pictures are congruent.
c. Both pictures are rectangles.
d. The pictures are similar.
- _____ 18. What is the perimeter of this figure?

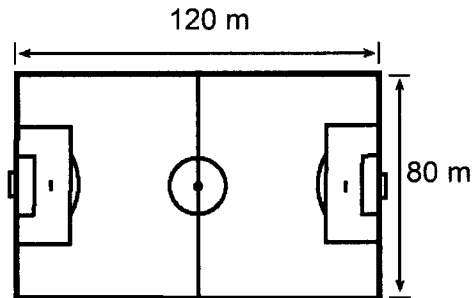


- a. 54 in. b. 63 in. c. 72 in. d. 81 in.
- _____ 19. The length of one side of a rhombus is 14 centimeters. What is the perimeter? (Hint: $P = 4s$.)
- a. 196 centimeters c. 42 centimeters
b. 56 centimeters d. 28 centimeters
- _____ 20. The perimeter of a parallelogram is 22 centimeters. One short side is 5 centimeters long. What is the length of one long side of the parallelogram?
- a. 5 centimeters c. 27 centimeters
b. 6 centimeters d. 54 centimeters
- _____ 21. Mrs. Chung is putting up a wallpaper border around her daughter's bedroom. How many feet of border does she need if the room is the shape of a rectangle that is 15-foot by 16-foot? (Hint: $P = 2l + 2w$)
- a. 31 feet b. 60 feet c. 62 feet d. 64 feet

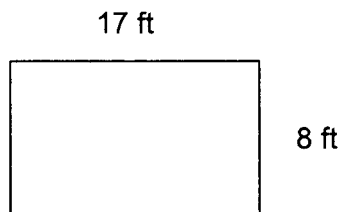
Name: _____

ID: A

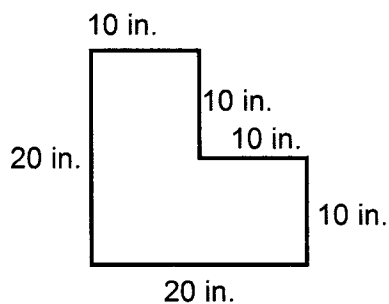
- _____ 22. Soccer requires players to run for most of the game. In order to improve each players ability to run for long periods of time, Coach Namavar has his players run laps around the soccer field. What is the perimeter of the soccer field shown below? (Hint: $P = 2l + 2w$)



- a. 200 m b. 280 m c. 400 m d. 410 m
- _____ 23. What is the area of the figure? (Hint: $A = \ell w$)

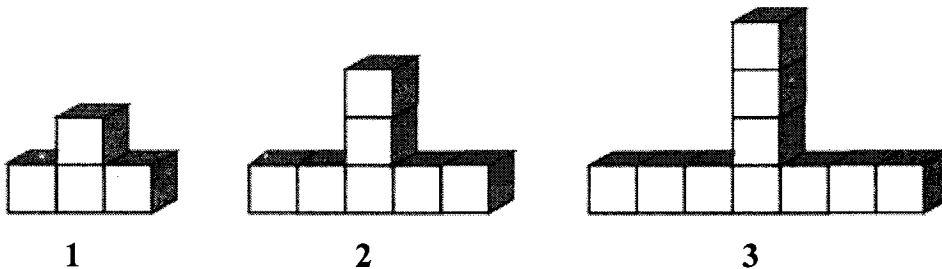


- a. 25 square feet c. 128 square feet
b. 50 square feet d. 136 square feet
- _____ 24. What is the area of the figure?



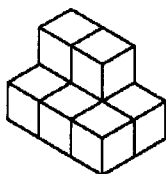
- a. 80 square inches c. 300 square inches
b. 200 square inches d. 400 square inches
- _____ 25. The perimeter of a square is 36 inches. What is the area of the square? (Hint: $P = 4s$ and $A = s \times s$)
- a. 36 square inches c. 82 square inches
b. 81 square inches d. 1296 square inches

- _____ 26. Mrs. Lazlo built a playhouse for her children. The playhouse floor is in the shape of a rectangle with the measurements listed below. What is the area of the playhouse floor? (Hint: $A = \ell w$)
 $w = 8$ feet
 $l = 10$ feet
- a. 18 square feet
b. 36 square feet
c. 80 square feet
d. 88 square feet
- _____ 27. Billboards are one way for businesses to advertise and make money. What is the area of a 5 yard by 7 yard billboard that is in the shape of a rectangle? (Hint: $A = \ell w$)
- a. 70 square yards
b. 24 square yards
c. 35 square yards
d. 57 square yards
- _____ 28. Sidney has 30 black ceramic tiles. He wants to make a rectangular shaped design with the black tiles, then make a yellow ceramic tile border around it. How should he can arrange the black tiles to make the longest yellow border?
- a. 5 tiles by 6 tiles
b. 1 tile by 30 tiles
c. 2 tiles by 15 tiles
d. 3 tiles by 10 tiles
- _____ 29. Mr. Vo planted tulip bulbs in his garden. For every 4 red bulbs he planted, he planted 3 yellow bulbs. How many yellow bulbs did he plant if he planted 16 red bulbs?
- a. 7 yellow bulbs
b. 8 yellow bulbs
c. 12 yellow bulbs
d. 20 yellow bulbs
- _____ 30. How many cubes are needed to build the 9th figure, if the pattern continues?

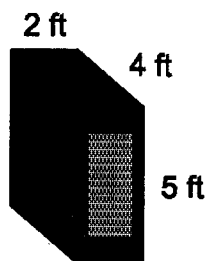


- a. 26 cubes c. 28 cubes
b. 27 cubes d. 29 cubes
- _____ 31. Mrs. Choike has 34 feet of edging to enclose a rectangular garden. What length and width would make the garden with the greatest area?
- a. 7 feet wide and 10 feet long
b. 6 feet wide and 11 feet long
c. 8 feet wide and 9 feet long
d. 5 feet wide and 12 feet long

- _____ 32. A panther needs 108 square miles of habitat to live and reproduce. What length and width gives this area with the shortest perimeter?
- a. 6 miles wide and 18 miles long
 - b. 3 miles wide and 36 miles long
 - c. 9 miles wide and 12 miles long
 - d. 4 miles wide and 27 miles long
- _____ 33. What is the volume of this figure?



- a. 6 cubic units
 - b. 7 cubic units
 - c. 8 cubic units
 - d. 14 cubic units
- _____ 34. What is the volume of this crate? (Hint: $V = \ell wh$)

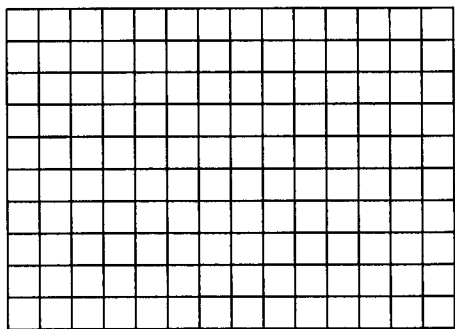
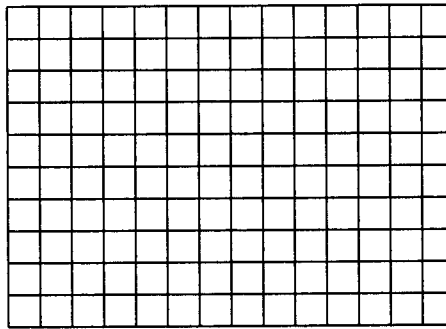


- a. 11 cubic feet
 - b. 20 cubic feet
 - c. 20 square feet
 - d. 40 cubic feet
- _____ 35. The volume of a box is 160 cubic meters. Its length is 10 meters, and its height is 8 meters. What is the width of the box? (Hint: $V = \ell wh$)
- a. 2 meters
 - b. 80 meters
 - c. 1,600 meters
 - d. 12,800 meters
- _____ 36. Tony's toy box has a width of 2 feet, a height of 3 feet, and a length of 3 feet. What is the volume of the toy box? (Hint: $V = \ell wh$)
- a. 6 cubic feet
 - b. 8 cubic feet
 - c. 18 cubic feet
 - d. 18 square feet

37. The Art Club used plaster of Paris to make impressions of their hands. The students put plaster of Paris into a frame with a length of 10 inches, a width of 10 inches, and a height of 3 inches. They filled the entire frame, then pressed their hand in the plaster of Paris to make the impression. How much plaster of Paris did it take to fill the frame? (Hint: $V = \ell wh$)
- a. 23 cubic inches c. 300 cubic inches
b. 100 cubic inches d. 300 square inches

Other

38. On the left grid below, draw two different-sized rectangles that are similar. On the right grid, draw two rectangles that are NOT similar.

Similar**NOT similar**

39. On the lines below, write two sentences describing how the solids are alike.

